

<110> F. Hoffmann-La Roche

5 <120> PDK4 as Marker for PPAR modulation

<130> 22518

<160> 7

10 <170> PatentIn version 3.2

<210> 1

<211> 3499

15 <212> DNA

<213> Mus musculus

<220>

20 <221> Pyruvat Dehydrogenase Kinase isoenzyme 4 (PDK4)

<222> (1)..(3499)

<223> representative cDNA (complete cds) (BC026134, as of 25.03.2004),  
for gene under UniGene ID Mm. 235547

25 <400> .1

ccacgcgtcc gaacccttca cccaggctcg agcaccggg accctgggac cacaacgcac  
60

ttgctccctc tcgaccgcgc tcctgaccg cagccctcgc caaccctacg gatcctaacc  
30 120

accgccagcc taggtgggcg tcaggatgaa ggcagcccgc ttcgtgatgc gcagcgccag  
180

35 ctcgctgagc agcgccagcc tgggtccccag ggaggctgag ctgttctccc gctacagccc  
240

gtccccgctg tccatgaagc agctgctgga ctttggttca gaaaatgcct gtgaaagaac  
300

40 gtcctttgct tttctgcggc aagagctgcc cgtccgcctg gccaatatcc tgaaggagat  
360

tgacatcctg cctgaccgct tagtgaacac tccttcggtg cagctggtga agagctggta  
45 420

tatccagagc ctgatggatt tgggtggagtt ccatgagaag agcccagaag accagaaagc  
480

50 cctgtcagag tttgtagaca cgctgggtcaa agttcgaaac agacatcata atgtgggtccc  
540

tacaatggct caaggcatcc tggagtataa agacacctgc acagtggacc ccgttaccaa  
600

55 tcaaaatctt cagtattttt tagaccggtt ttacatgaac cgcatttcta ctcggatgct  
660

catgaatcag cacatcctca tattcagtga ctcaaagacg ggaaacccaa gccacattgg  
60 720

aagtatcgac ccaaactgtg atgtggtagc agtagtccaa gatgcctttg agtgtgcaaa  
780

65 gatgctctgc gaccagtatt atctaacatc gccagaatta aacctcacac aagtcaatgg  
840

aaaatttcca ggccaaccaa tccacattgt gtacgttcct tcacaccttc accacatgct  
900

5 cttcgaactc ttcaagaatg ccatgagggc cacggtcgag catcaagaaa accgtccttc  
960

cttgacccca gtagaggcca ctgtcgtctt gggaaaagaa gaccttaca tcaagatttc  
1020

10 tgaccgagga ggcggtgttc ctctgaggat tactgaccgc ctctttagtt acacgtactc  
1080

cactgctcca acacctgtga tggacaattc ccggaatgcc cctttggctg gttttggtta  
1140

15 tggcttgcca atttctcgtc tctacgcca gtattttcaa ggagatctga atctctactc  
1200

tatgtcaggt tatgggacag acgctatcat ctacttaaag gctttatctt ctgagtctgt  
1260

20 agaaaagctc ccagtcttta acaagtcagc cttcaaacat tatcagatga gctccgaagc  
1320

25 tgatgactgg tgtatcccaa gcagggaacc gaagaacctg gcgaaggaga agctggcagt  
1380

gtgaagcgga tgacgcctga cattttacgg gatcaaagtg ggtctgtggc attgctgctt  
1440

30 cgtgaatgtg tgtggactct agtttccgca aaacaacgca acacaaaacc aagcaagcaa  
1500

aacacaaaca cgagtacaaa ccttgacctg atgagggaca gagcttggtt ggatgacccg  
1560

35 ggagaagtca gggcagggct ccaggggata acaggtgtcc tgcttctcct ttggcaatgc  
1620

40 aaaatgactc ctgactgttc caaatactga aaagaagtct gcctctgagt tacagctctt  
1680

tctcaacaag tacagagttt gaggcttgca gttgcaacag ctggatgttt ggtggttctt  
1740

45 gctgccagcc aaataaattg gtgtttagt gacattttca gtgtttcccc gccatgcaaa  
1800

gcttggcgcc ttgggagaaa tgtgtgtaaa tgtacattgt ataggtatta gtgtgctcta  
1860

50 gaaaggacag gatggaagga atcaaagcac tttatcgagc ttgtggctga gcattgcagc  
1920

55 ctatgtgcaa acccagagga aaagtatctc tgtcaagaca gctccagtat catgcagctt  
1980

tttatgtttg cactcaaaaa gccagtgcct tctggctggt gccgaggctt gggtgaaatg  
2040

60 ttaaatatgc actgacctca gaaagtcgag ttcaaaagg agataaaatt gccaaagtga  
2100

tccaaggatt gtgcatgttg ggaaacccat atgagagaaa ggattctcat acttagaact  
65 2160

ttcctatgaa gaaatggtgg taaactttct ctacctagaa gtagtggaaa tttcaaggtc  
2220

5 atcttaaaaa agatgtgCGt tGTatatttt aactacattc tctacactct aacattaaca  
2280

tatctattca aatttGtcta gttgccaatt gtcttcagag tGTgaaaatt taaatccttc  
2340

10 ttgaagtatc tttcgtgaga gtagtatgga agtaaaacgt tctcatatca ggaggatgtc  
2400

atttGTgaag catggggaca tcatgaacta gtgatgtgCG tgaggcttgg gaggctgaag  
2460

15 ggtaaggatc agcgggaggc catccatgta ggagagagaa ttaaaacgag gagcgaggga  
2520

20 agcaatggag agaggggaagc aagaaaggaa ccagaaggct ggcacatcc tatttcccac  
2580

aggctaacc aagggatgct ctgtgccttt cctggggagg gaaggggatg aactggtaga  
2640

25 tttgaaagca gtatggcttc ttctgtgggt ctccctctta ctagacaagg tgaaatgata  
2700

attcgtgtca aattaatgtg aaattttttt cctgcattgt aatattatga ggcctgagtc  
2760

30 gcagttgagt ttgaaatttg tatttaattt cacagtGacc tagagctaag gtgctcccg  
2820

ttgtggcaat aggagccaca agtattttct ttctttcttt cgttctttct ttctttcttt  
2880

ctttctttct ttctttcttt ctttctttcc ttcttctctt ccttccttcc ttcttctt  
2940

40 ccttccttcc ttcttctt ctttttcttt tctcttctct tcttttcttt tttctgtttc  
3000

ttttctttt tttgcattgt agatgttGtc cttaaaagat cagggcagtg actttcacag  
3060

45 caggactttg actcccat tggttgatca cacaaaaCtg tcagcatttg ggtaatctga  
3120

tGTatagttg ttttGttgct gatgtttcca ttgaaatttc agctctgagt ttgtgcacat  
3180

gaatacttac ttgtgtttac caaaggTcta aggcatttgg ttacttaacc caaatatcct  
3240

55 gaactgtgCG taaagtaata gagaaaagct ttagggTctc aatagtgtca cctgtgtaaa  
3300

tcaaatcaaa atagccttcc ctattattta tgaacccatg ggagacttta aactcttgta  
3360

60 gatagatgct aaatgcccag gccacttaa cttattaatg tGTgaattac atttatgttt  
3420

ttagttttata tgcaaagaat tGTgataatt ttataataaa tttttttatt ataaaaaaaa  
3480

65

aaaaaaaaaa aaaaaaaaaa  
3499

5 <210> 2  
<211> 3449  
<212> DNA  
<213> Mus musculus

10 <220>  
<221> Pyruvat Dehydrogenase Kinase isoenzyme 4 (PDK4)  
<222> (1)..(3449)  
15 <223> representative cDNA (NM\_013743, as of 25.03.2004)  
for gene under UniGene ID Mm.235547

<400> 2  
gagcaccg cg gaccctggga ccacaacgca cttgctccct ctcgaccg cg ctcctgaccc  
60

20 gcagccctcg ccaaccctac ggatcctaac caccgccagc ctaggtgggc gtcaggatga  
120

25 aggcagcccg cttcgtgatg cgcagcgcca gctcgtgag cagcgccagc ctggtcccca  
180

gggaggtcga gctgttctcc cgctacagcc cgtccccgct gtccatgaag cagctgctgg  
240

30 actttggttc agaaaatgcc tgtgaaagaa cgctctttgc ttttctgcgg caagagctgc  
300

ccgtccgcct ggccaatatc ctgaaggaga ttgacatcct gcctgaccgc ttagtgaaca  
360

35 ctccttcggt gcagctggtg aagagctggt atatccagag cctgatggat ttggtggagt  
420

40 tccatgagaa gagcccagaa gaccagaaag ccctgtcaga gtttgtagac acgctggtca  
480

aagttcgaaa cagacatcat aatgtggtcc ctacaatggc tcaaggcatc ctggagtata  
540

45 aagacacctg cacagtggac cccgttacca atcaaaatct tcagtatttt ttagaccggt  
600

tttcatgaa ccgcatttct actcggatgc tcatgaatca gcacatcctc atattcagt  
660

50 actcaaagac gggaaaccca agccacattg gaagtatcga cccaaactgt gatgtggtag  
720

55 cagtagtcca agatgccttt gagtgtgcaa agatgctctg cgaccagtat tatctaacad  
780

cgccagaatt aaacctcaca caagtcaatg gaaaatttcc aggccaacca atccacattg  
840

60 tgtacgttcc ttcacacctt caccacatgc tcttcgaact cttcaagaat gccatgaggg  
900

ccacggtcga gcatcaagaa aaccgtcctt ccttgacccc agtagaggcc actgtcgtct  
960

65 tgggaaaaga agaccttaca atcaagattt ctgaccgagg aggcggtggt cctctgagga  
1020

ttactgaccg cctcttttagt tacacgtact ccactgctcc aacacctgtg atggacaatt  
1080

5 cccggaatgc ccctttggct ggttttgggt atggcttgcc aatttctcgt ctctacgcca  
1140

agtattttca aggagatctg aatctctact ctatgtcagg ttatgggaca gacgctatca  
1200

10 tctacttaaa ggctttatct tctgagtctg tagaaaagct cccagtcttt aacaagtcag  
1260

ccttcaaaca ttatcagatg agctccgaag ctgatgactg gtgtatccca agcagggaac  
15 1320

cgaagaacct ggcgaaggag aagctggcag tgtgaagcgg atgacgcctg acattttacg  
1380

20 ggatcaaagt gggctctgtg cattgctgct tcgtgaatgt gtgtggactc tagtttccgc  
1440

aaaacaacgc aacacaaaac caagcaagca aaacacaaac acgagtacaa accttgacct  
1500

25 gatgagggac agagcttggg tggatgaccc gggagaagtc agggcagggc tccaggggat  
1560

aacagggtgc ctgcttctcc tttggcaatg caaaatgact cctgactggt ccaaatactg  
30 1620

aaaagaagtc tgcctctgag ttacagctct ttctcaacaa gtacagagtt tgaggcttgc  
1680

35 agttgcaaca gctggatggt tgggtggttct tgctgccagc caaataaatt ggtgttttagt  
1740

gaacattttc agtgtttccc cgccatgcaa agcttggcgc cttgggagaa atgtgtgtaa  
1800

40 atgtacattg tataggtatt agtgtgctct agaaaggaca ggatggaagg aatcaaagca  
1860

ctttatcgag cttgtggctg agcattgcag cctatgtgca aaccagagg aaaagtatct  
45 1920

ctgtcaagac agctccagta tcatgcagct ttttatgttt gcactcaaaa agccagtgcc  
1980

50 ttctggctgg tgccgaggct tgggtgaaat gttaaatatg cactgacctc agaaagtcga  
2040

gttcaaaagg gagataaaat tgccaaagtg atccaaggat tgtgcatggt gggaaaccca  
2100

55 tatgagagaa aggattctca tacttagaac tttcctatga agaaatggtg gttaaactttc  
2160

tctacctaga agtagtgga aatttcaagg catcttaaaa aagatgtgcg ttgtatattt  
60 2220

taactacatt ctctacactc taacattaac atatctattc aaatttgtct agttgccaat  
2280

65 tgtcttcaga gtgtgaaaat ttaaatcctt cttgaagtat ctttcgtgag agtagtatgg  
2340

aagtaaaacg ttctcatatc aggaggatgt catttgtgaa gcatggggac atcatgaact  
 2400  
 5 agtgatgtgc gtgaggcttg ggaggctgaa gggtaaggat cagcgggagg ccatccatgt  
 2460  
 aggagagaga attaaaacga ggagcgaggg aagcaatgga gagaggggaag caagaaagga  
 2520  
 10 accagaaggc tggcatcatc ctatttccca caggctaacc caagggatgc tctgtgcctt  
 2580  
 tcctggggag ggaagggggt gaactggtag atttgaaagc agtatggctt cttctgtggg  
 2640  
 15 tctccctctt actagacaag gtgaaatgat aattcgtgtc aaattaatgt gaaatTTTTT  
 2700  
 tcctgcattg taatattatg aggcctgagt cgcagttgag tttgaaattt gtatttaatt  
 2760  
 20 tcacagtgc ctagagctaa ggtgctccc gttgtggcaa taggagccac aagtattttc  
 2820  
 25 tttctttctt tcgttctttc tttctttctt tctttctttc tttctttctt tctttctttc  
 2880  
 cttccttctt tccttccttc cttccttctt tccttccttc cttccttctt tccttttctt  
 2940  
 30 ttctctttct tctttttctt ttttctgttt ctttttcttt ttttgcattg tagatgttgt  
 3000  
 ccttaaaaga tcagggcagt gactttcaca gcaggacttt gactcccaca ttggttgatc  
 3060  
 35 acacaaaact gtcagcattt gggtaatctg atgtatagtt gttttgttgc tgatgtttcc  
 3120  
 40 attgaaattt cagctctgag ttgtgtcaca tgaatactta cttgtgttta ccaaaggctt  
 3180  
 aaggcatttg gttacttaac ccaaatatcc tgaactgtgc gtaaagtaat agagaaaagc  
 3240  
 45 tttaggttct caatagtgtc acctgtgtaa atcaaatcaa aatagccttc cctattattt  
 3300  
 atgaacccat gggagacttt aaactcttgt agatagatgc taaatgcccga ggcccactta  
 3360  
 50 acttattaat gtgtgaatta ctttatgtt tttagtttat atgcaaagaa ttgtgataat  
 3420  
 55 tttataataa atatttttat tataatagt  
 3449  
 60 <210> 3  
 <211> 412  
 <212> PRT  
 <213> Mus musculus  
 65 <220>  
 <221> Pyruvate Dehydrogenase Kinase isoenzyme 4 (PDK4)  
 <222> (1)..(412)

<223> protein sequence (070571, as of 25.03.2004),  
of gene under UniGene ID Mm.235547

<400> 3

5 Met Lys Ala Ala Arg Phe Val Met Arg Ser Ala Ser Ser Leu Ser Ser  
1 5 10 15

10 Ala Ser Leu Val Pro Arg Glu Val Glu Leu Phe Ser Arg Tyr Ser Pro  
20 25 30

15 Ser Pro Leu Ser Met Lys Gln Leu Leu Asp Phe Gly Ser Glu Asn Ala  
35 40 45

20 Cys Glu Arg Thr Ser Phe Ala Phe Leu Arg Gln Glu Leu Pro Val Arg  
50 55 60

25 Leu Ala Asn Ile Leu Lys Glu Ile Asp Ile Leu Pro Asp Arg Leu Val  
65 70 75 80

30 Asn Thr Pro Ser Val Gln Leu Val Lys Ser Trp Tyr Ile Gln Ser Leu  
85 90 95

35 Met Asp Leu Val Glu Phe His Glu Lys Ser Pro Glu Asp Gln Lys Ala  
100 105 110

40 Leu Ser Glu Phe Val Asp Thr Leu Val Lys Val Arg Asn Arg His His  
115 120 125

45 Asn Val Val Pro Thr Met Ala Gln Gly Ile Leu Glu Tyr Lys Asp Thr  
130 135 140

50 Cys Thr Val Asp Pro Val Thr Asn Gln Asn Leu Gln Tyr Phe Leu Asp  
145 150 155 160

55 Arg Phe Tyr Met Asn Arg Ile Ser Thr Arg Met Leu Met Asn Gln His  
165 170 175

60 Ile Leu Ile Phe Ser Asp Ser Lys Thr Gly Asn Pro Ser His Ile Gly  
180 185 190

65 Ser Ile Asp Pro Asn Cys Asp Val Val Ala Val Val Gln Asp Ala Phe  
195 200 205

70 Glu Cys Ala Lys Met Leu Cys Asp Gln Tyr Tyr Leu Thr Ser Pro Glu  
210 215 220

75 Leu Asn Leu Thr Gln Val Asn Gly Lys Phe Pro Gly Gln Pro Ile His  
225 230 235 240

80 Ile Val Tyr Val Pro Ser His Leu His His Met Leu Phe Glu Leu Phe  
245 250 255

5

10

15

20

25

30

35

40

45

50

55

60

65

<210>	4
<211>	19
<212>	DNA
<213>	Mus musculus

```
<220>
<221> PDK4 forward primer
<222> (1)..(19)
```

```
<400> 4
ttcagtgttt ccccgccat
19
```

```
<210> 5
<211> 21
<212> DNA
<213> Mus musculus
```

<220>  
<221> PDK4 reverse primer  
<222> (1)..(21)



<400> 5  
tccaacatg cacaatcctt g  
21

5

<210> 6  
<211> 21  
<212> DNA  
<213> Mus musculus

10

<220>  
<221> s12 forward primer  
<222> (1)..(21)

15

<400> 6  
tgaaccagat gcaccgctta g  
21

20

<210> 7  
<211> 20  
<212> DNA  
<213> Mus musculus

25

<220>  
<221> s12 reverse primer  
<222> (1)..(20)

30

<400> 7  
ttcttctttt gcacgtggcc  
20

35